

To: Darrel Cruz 2[Darrel.Cruz@washoetribe.us]; Darrel Cruz 1[Darrel Cruz 1]; Michelle Hochrein[Michelle.Hochrein@washoetribe.us]
Cc: Riley, Gary[riley.gary@epa.gov]; 'Brown, Anthony R (RM)'[anthony.brown@bp.com]; Lombardi, Marc (marc.lombardi@amecfw.com)[marc.lombardi@amecfw.com]
From: Deschambault, Lynda
Sent: Thur 1/12/2017 12:01:19 AM
Subject: FW: Leviathan Mine - OW - El Nino Monitoring January 7-9, 2017

Hello,

As you know there has been a LOT of precipitation.

Below is what we received from Atlantic Richfield regarding their oversight and monitoring of the situation.

I'll also send the latest site visit, and webcam photos!

Lynda

From: Lombardi, Marc [mailto:Marc.Lombardi@amecfw.com]
Sent: Monday, January 09, 2017 10:49 AM
To: Riley, Gary <riley.gary@epa.gov>; Deschambault, Lynda <Deschambault.Lynda@epa.gov>; Greg Reller <gr@burlesonconsulting.com>
Cc: Brown, Anthony R (RM) <anthony.brown@bp.com>; Cohen, Adam <Adam.Cohen@dgsllaw.com>
Subject: FW: Leviathan Mine - OW - El Nino Monitoring January 7-9, 2017

Gary / Lynda,

Below is a summary of observations of precipitation at Monitor Pass, and streamflow and water quality for Leviathan Creek at Station 15, based on data available 0900 January 9, 2017.

Thanks,

Marc

Marc R. Lombardi, CEM, PG

Principal Geologist / Office Manager, Environment & Infrastructure Americas, Amec Foster Wheeler

10940 White Rock Road, Suite 190, Rancho Cordova, CA 95670, USA

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marc.lombardi@amecfw.com amecfw.com

From: Lombardi, Marc

Sent: Monday, January 09, 2017 10:37 AM

To: Brown, Anthony R (RM) <anthony.brown@bp.com>

Cc: Cohen, Adam <Adam.Cohen@dgsllaw.com>

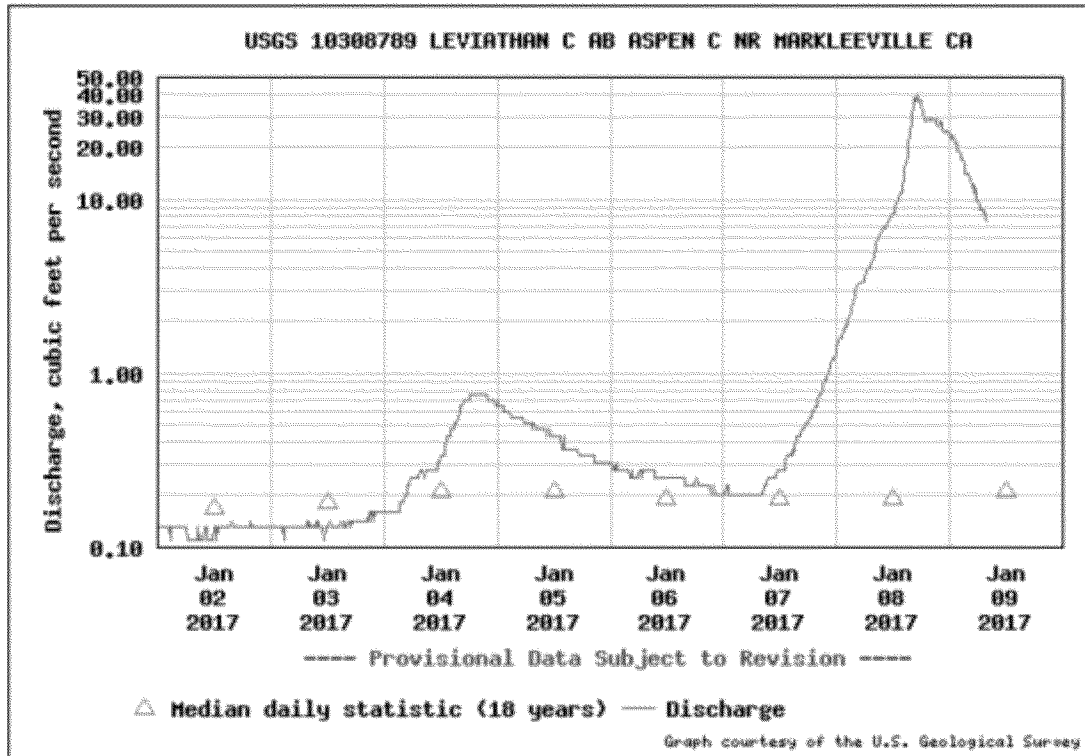
Subject: Leviathan Mine - OW - El Nino Monitoring January 7-9, 2017

Tony,

Below is a summary of observations of precipitation at Monitor Pass, and streamflow and water quality for Leviathan Creek at Station 15, based on data available 0900 January 9, 2017.

Precipitation at the Monitor Pass SNOTEL station began approximately 0700 January 7. By 0900 January 9, 2.9 inches (as liquid water) of precipitation were measured.

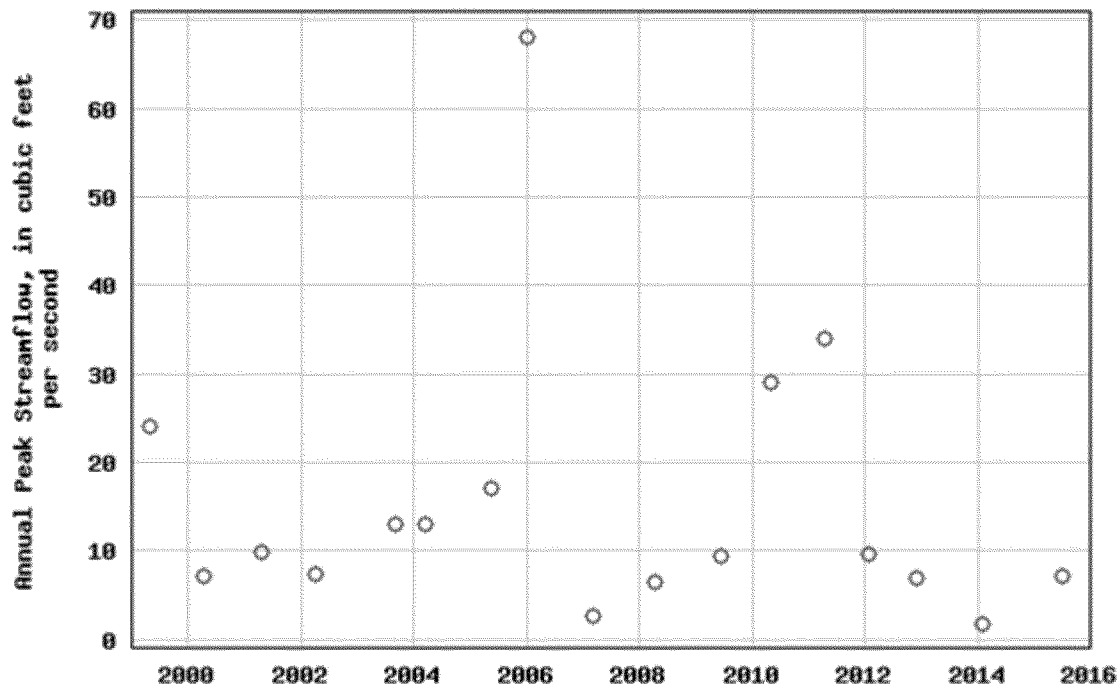
Streamflow on Leviathan Creek at Station 15 (downstream of the beaver complex but upstream of the confluence with Aspen Creek) increased from a pre-storm value of <0.2 cfs to a peak value of 40 cfs at 1900 January 8, and subsequently declined to 6.6 cfs at 0900 January 9.



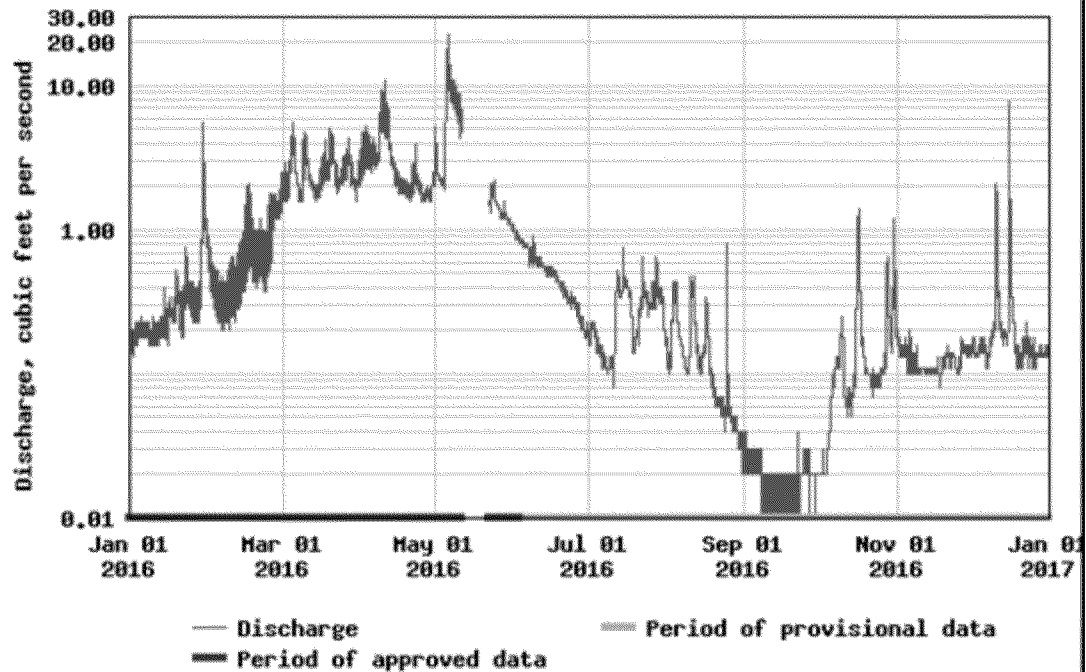
The 40 cfs peak flow is the second largest flowrate measured at this location. The largest flow, 68 cfs, was measured on December 31, 2005.

Other relatively large flowrates (>20 cfs) occurred in 1999, 2010, 2011, and 2016.

USGS 10308789 LEVIATHAN C AB ASPEN C NR MARKLEEVILLE CA

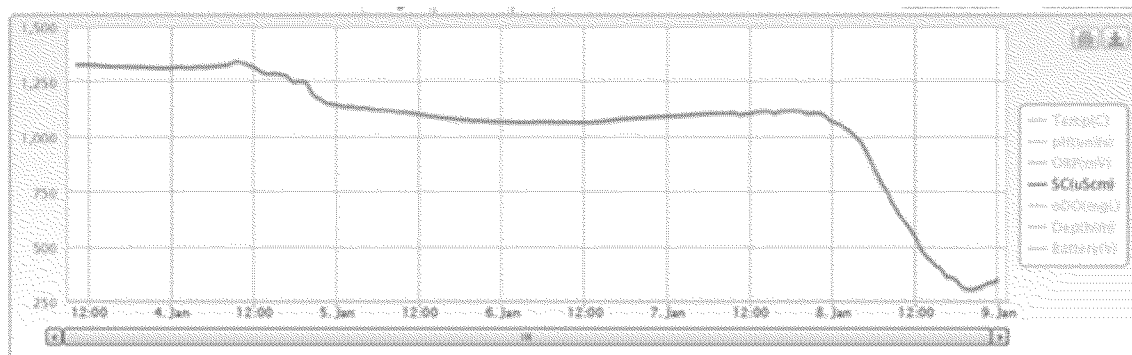


USGS 10308789 LEVIATHAN C AB ASPEN C NR MARKLEEVILLE CA

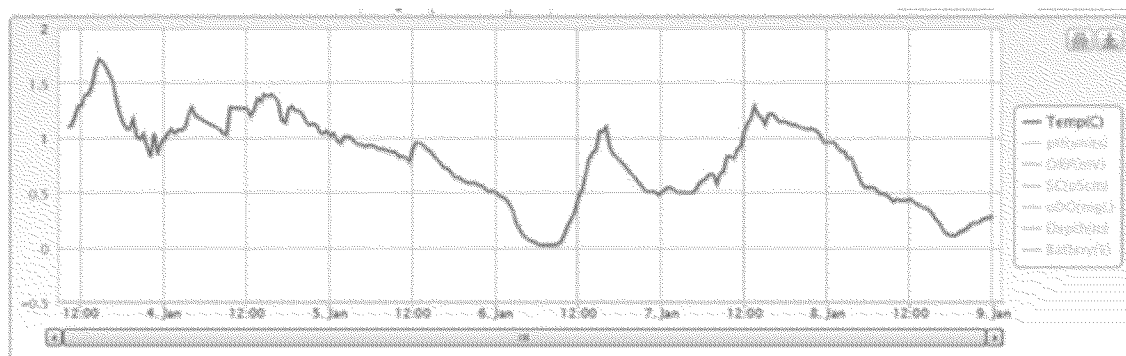


Graph courtesy of the U.S. Geological Survey

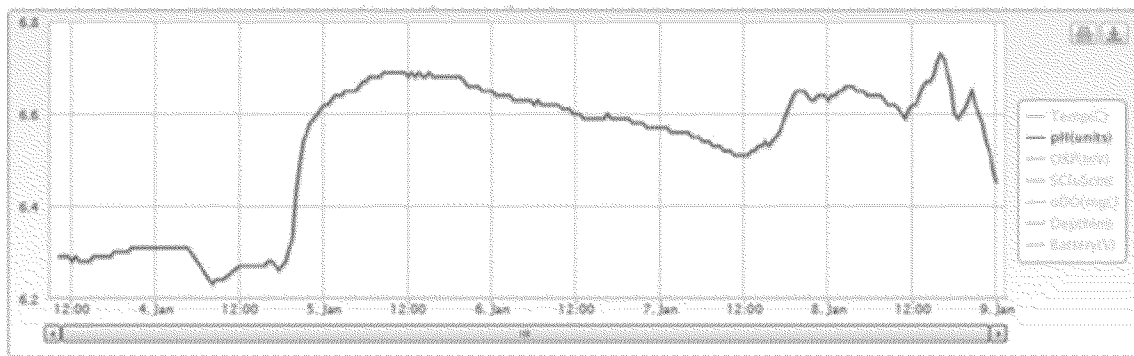
Specific conductance (SC) decreased from a pre-storm value of approximately 1100 uS/cm to a minimum of approximately 300 uS/cm at 2000 January 8, and increased slightly to approximately 350 uS/cm by 0900 January 9. This indicates that the storm runoff has lower dissolved solids, and hence lower SC, than does pre-storm baseflow. There was not a SC increase between 1600 and 1830 January 8 (see discussion of pH data below).



Water temperature declined from approximately 1 C to 0.1 C, and subsequently rebounded to approximately 0.3 C. The value of approximately 0 C during high flow is consistent with the storm runoff being composed largely of recently melted snow.



pH varied from a pre-storm value of ~6.5 to a maximum of 6.7 at 1600 January 8, followed by a drop to 6.6 at 1830, a rise to 6.65 at 2000, and a decline to approximately 6.45 by 0900 January 9. The current pH is comparable to pre-storm values. Note that the scale of the graph makes these relatively small changes – a few tenths of a pH unit – appear more dramatic than they actually are. Also note that the current pH is higher than the values of approximately 6.3 observed January 4.



Thanks,

Marc

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